

Listing of the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

- Claim 1. **(Currently Amended)** A method of depositing chitosan onto a substrate, **comprising wherein said method comprises the steps of:**
- a) contacting the substrate with a solution containing chitosan; **and**
 - b) applying an electric current to the substrate sufficient to deposit the chitosan onto the substrate; **and**
 - c) **incorporating a component to the deposited chitosan, the component being selected from the group consisting of a protein, a polynucleotide, and a cell.**
- Claim 2. **(Currently Amended)** The method of claim 1, **further-comprising wherein said method additionally comprises the step of** washing the substrate containing deposited chitosan with water, a solution with a neutral pH, a basic solution, or an acidic solution.
- Claim 3. **(Currently Amended)** The method of claim 1, **further-comprising wherein said method additionally comprises the step of** contacting chitosan deposited on the substrate with chitosanase.
- Claim 4. **(Original)** The method of claim 1, wherein the substrate is a semiconductor.
- Claim 5. **(Original)** The method of claim 1, wherein the substrate is a conductive polymer.
- Claim 6. **(Original)** The method of claim 1, wherein the substrate is a metal.
- Claim 7. **(Original)** The method of claim 1, wherein the solution contains chitosan in a concentration of from about 0.0001 to about 30% w/v.

Claim 8. **(Original)** The method of claim 7, wherein the solution contains chitosan in a concentration of from about 0.1 to about 10 % w/v.

Claims 9-19. **(Canceled)**

Claim 20. **(New)** The method of claim 1, wherein in said incorporated component is a protein.

Claim 21. **(New)** The method of claim 20, wherein said protein is an enzyme.

Claim 22. **(New)** The method of claim 1, wherein said incorporated component is a polynucleotide.

Claim 23. **(New)** A method of depositing chitosan onto a surface of a microelectronic device, comprising the steps of:

- a) providing a microelectronic device comprising a conductive surface;
- b) contacting the conductive surface with a solution containing chitosan;
 and
- c) applying an electric current to the conductive substrate sufficient to deposit the chitosan onto the conductive surface.

Claim 24. **(New)** The method of claim 23, wherein said method additionally comprises the step of:

- d) incorporating a component to the deposited chitosan, the component being selected from the group consisting of a protein, a polynucleotide, and a cell.

Claim 25. **(New)** The method of claim 24, wherein said method additionally comprises neutralizing the deposited chitosan with either a basic solution or an acidic solution.

Claim 26. **(New)** The method of claim 24, wherein said incorporated component is a protein.

- Claim 27. **(New)** The method of claim 26, wherein said protein is an enzyme.
- Claim 28. **(New)** The method of claim 24, wherein said incorporated component is a polynucleotide.
- Claim 29. **(New)** A method of depositing a chitosan layer onto the surface of a substrate, comprising the steps of:
- a) contacting the substrate with a solution containing chitosan; and
 - b) applying an electric current to the substrate sufficient to deposit the chitosan onto the substrate, to thereby form said deposited chitosan layer, wherein said layer consists essentially of chitosan.
- Claim 30. **(New)** The method of claim 29, wherein said method additionally comprises the step of:
- c) incorporating a component to the deposited chitosan, the component being selected from the group consisting of a protein, a polynucleotide, and a cell.
- Claim 31. **(New)** The method of claim 30, wherein said incorporated component is a protein.
- Claim 32. **(New)** The method of claim 31, wherein said protein is an enzyme.
- Claim 33. **(New)** The method of claim 30, wherein said incorporated component is a polynucleotide.